

IN THE CLAIMS:

This listing of the claims replaces all prior versions and listings of the claims in this application.

The text of all pending claims (including any withdrawn claims) is set forth below. Canceled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~striketrough~~. The status of each claim is indicated with one of (Original), (Currently amended), (Canceled), (Withdrawn), (Withdrawn—Currently amended), (Previously presented), (New), and (Not entered).

Please CANCEL claim 36, 46, and 51 without prejudice or disclaimer, AMEND claims 1-4, 6-20, 22, 25-27, 34, 35, 37-45, 47-50, and 52, and ADD new claims 53-58 in accordance with the following:

1. (Currently amended) A data storage medium, comprising:

~~audio/visual~~ audio/video (AV) data; and

~~mark-up documents to reproduce the AV data in an interactive mode, and contain interactive content to be displayed on an interactive screen with~~ by displaying the AV data on an AV screen embedded in the interactive a mark-up screen, displaying interactive contents associated with the AV data when the data storage medium is inserted into mark-up documents are interpreted by a presentation engine of a reproduction apparatus, in which the data storage medium is loaded;

~~wherein among the mark-up documents, comprise:~~

_____ a plurality of mark-up documents corresponding to different parental levels; and

_____ a start-up mark-up document comprises information about the mark-up documents to be displayed according to specifying which one of the plurality of mark-up documents corresponding to different parental levels is to be interpreted by the presentation engine of the reproduction apparatus depending on a set parental level to control access to the interactive content set in the reproduction apparatus.

2. (Currently amended) The data storage medium of claim 1, wherein ~~the information of~~ the start-up mark-up document comprises:

~~meta-information of~~ indicating a parental level, of the mark-up documents; and

~~where the set parental level and link information on one of identifying locations of the plurality of mark-up documents correspond corresponding to the different parental level in the meta-information levels.~~

3. (Currently amended) The data storage medium of claim 2, wherein the plurality of mark-up documents corresponding to different parental levels comprise:

a first mark-up document to be interpreted by the presentation engine of the reproduction apparatus only when the parental level indicated by the meta-information is not higher than the parental level set in the reproduction apparatus; and

a second mark-up document to be interpreted by the presentation engine of the reproduction apparatus only when the parental level indicated by the meta-information is higher than the parental level set in the reproduction apparatus; and

~~wherein where the link information comprises~~

first link information of one identifying the location of the first mark-up document;
~~documents to be displayed when the set parental level is higher than the parental level in the meta-information and~~

second link information of one identifying the location of the second mark-up document.
~~documents to be displayed when the set parental level is less than the parental level in the meta-information.~~

4. (Currently amended) The data storage medium of claim 1, wherein each mark-up document of the plurality of mark-up documents corresponding to different parental levels corresponds to a different one of the different parental levels, and is to be interpreted by the presentation engine of the reproduction apparatus only when the parental level of the mark-up document is the same as a parental level set in the reproduction apparatus; and

~~wherein the information of the start-up mark-up document is comprises link information indicating a path identifying locations of one the plurality of the mark-up documents corresponding to the set different parental level levels.~~

5. (Canceled)

6. (Currently amended) A data storage medium, comprising:

a video directory;

audio/visual-audio/video (AV) data stored in the video directory;

an interactive directory; and

mark-up documents, stored in the interactive directory, to reproduce the AV data in an interactive mode, and contain interactive content to be displayed on an interactive screen with by displaying the AV data on an AV screen embedded in the interactive-a mark-up screen, displaying interactive contents associated with the AV data when the data storage medium is inserted into mark-up documents are interpreted by a presentation engine of a reproduction apparatus in which the data storage medium is loaded;

a video directory of AV data; and

an interactive directory of the mark-up documents to reproduce the AV data in an interactive mode,

wherein the interactive directory comprises a plurality of sub-directories corresponding to two-a plurality of different parental levels; set to control access to the interactive content, and

wherein in each of the sub-directories, the mark-up documents comprise a plurality of mark-up documents corresponding to a-the plurality of different parental level-are levels stored in corresponding ones of the plurality of sub-directories corresponding to the plurality of different parental levels.

7. (Currently amended) A data storage medium, comprising:

a video directory'

audio/visual-audio/video (AV) data stored in the video directory;

an interactive directory;

mark-up documents, stored in the interactive directory, to reproduce the AV data in an interactive mode, and contain interactive content to be displayed on an interactive screen with by displaying the AV data on an AV screen embedded in the interactive-a mark-up screen, displaying interactive contents associated with the AV data when the data storage medium is inserted into mark-up documents are interpreted by a presentation engine of a reproduction apparatus in which the data storage medium is loaded;

a video directory of AV data; and

~~an interactive directory of mark-up documents, including a start-up document to control access to the interactive content;~~

wherein the interactive directory comprises a plurality of sub-directories corresponding to two a plurality of different parental levels; and

wherein where in each of the sub-directories, the mark-up documents comprise:

a plurality of mark-up documents corresponding to a the plurality of different parental level are levels stored; in corresponding ones of the plurality of sub-directories corresponding to the plurality of different parental levels; and

wherein the a start-up mark-up document further comprises comprising link information of identifying locations of the plurality of mark-up documents stored in each of the sub-directories corresponding to the plurality of different parental levels.

8. (Currently amended) The data storage medium of claim 7, wherein the link information is written using a different link tag for each of the plurality of mark-up documents corresponding to the plurality of parental levels.

9. (Currently amended) A data storage medium, comprising:

~~audio/visual~~ audio/video (AV) data; and

~~mark-up documents to reproduce the AV data in an interactive mode; and contain interactive content to be displayed on an interactive screen with~~ by displaying the AV data on an AV screen embedded in the interactive a mark-up screen; displaying interactive contents associated with the AV data when the data storage medium is inserted into mark-up documents are interpreted by a presentation engine of a reproduction apparatus in which the data storage medium is loaded; and

wherein the mark-up documents comprise a mark-up document comprising, or linked to, display rule information for a plurality of different parental levels specifying whether to display the mark-up document to correspond to interactive contents associated with the AV data depending on a set-parental level set in the reproduction apparatus.

10. (Currently amended) The data storage medium of claim 9, wherein the display rule information ~~comprises information indicating for the plurality of different parental levels specifies~~

whether to display elements of the mark-up documents depending on the parental level set in the reproduction apparatus. ~~document corresponding to at least two different parental levels.~~

11. (Currently amended) The data storage medium of claim 9, wherein the display rule information is written according to cascading style ~~sheet~~ sheets (CSS) rules.

12. (Currently amended) The data storage medium of claim 9, wherein ~~a class value is allotted to one of the elements of the mark-up document,~~ documents each have a class attribute; and

wherein the display rule information comprises information indicating for the plurality of different parental levels specifies whether to display an element to which each of the elements depending on a value of the class value is allotted attribute of the element and the parental level set in the reproduction apparatus.

13. (Currently amended) The data storage medium of claim 12, wherein the display rule information is written in the form of a cascading style sheets (CSS) file to which the mark-up document comprising, or linked to, display rule information for a plurality of different parental levels is linked.

14. (Currently amended) The data storage medium of claim 1, wherein the AV data is comprises DVD-video data;

wherein the mark-up documents are comprise:

_____ documents written in a mark-up language; and/or

_____ documents to which source codes ~~code~~ written in Javascript or a script language and/or Java language are is linked; or and/or

_____ documents into which source code written in the script language and/or Java is inserted; thereto, and and/or

_____ mark-up resources; and

wherein the different parental level ~~meets~~ levels comprise different parental levels according to a DVD-video-standards standard.

15. (Withdrawn—Currently amended) A data storage medium, comprising:

AV data; and

a mark-up document to reproduce the AV data in an interactive mode and comprising a manner in which another mark-up document written in a ~~Script~~script language is provided to meet a parental level that is set in advance.

16. (Withdrawn—Currently amended) The data storage medium of claim 15, wherein the mark-up document is linked to a script file written in a script language or a cascading style sheets (CSS) file.

17. (Currently amended) A method ~~to reproduce~~of reproducing data recorded on a data storage medium ~~using~~performed in a reproduction apparatus in which the data storage medium is loaded,

the data comprising

audio/video (AV) data, and

mark-up documents to reproduce the AV data in an interactive mode when the mark-up documents are interpreted by a presentation engine of the reproduction apparatus,

the mark-up documents comprising

a plurality of mark-up documents corresponding to different parental levels, and

a start-up mark-up document specifying which one of the plurality of mark-up documents corresponding to different parental levels is to be interpreted by the presentation engine depending on a parental level set in the reproduction apparatus,

the method comprising:

~~reading data recorded on the data storage medium in an interactive mode, including a~~
the start-up mark-up document from the data storage medium; and audio/visual (AV) data that is
~~linked and embedded in the mark-up document;~~

~~identifying a set~~the parental level set in the reproduction apparatus; and

~~reproducing the AV data in the interactive mode using a~~reading one of the plurality of
~~mark-up document~~documents corresponding to the different parental levels that the read start-
up mark-up document specifies is to be interpreted by the presentation engine for the identified
parental level set in the reproduction apparatus;

interpreting the read one of the plurality of mark-up documents using the presentation engine of the reproduction apparatus to display a mark-up screen having an AV screen embedded therein;

reading the AV data from the data storage medium;

decoding the read AV data to reproduce the AV data; and

displaying the reproduced AV data on the AV screen embedded in the mark-up screen.

18. (Currently amended) The method of claim 17, wherein ~~comprises: identifying the parental level in the start-up mark-up document comprises~~ meta-information written in indicating a parental level of the mark-up documents; document designated as a start-up document; and
~~reproducing the AV data using wherein the reading of one of the plurality of mark-up document selected based upon a result of documents corresponding to the different parental levels from the data storage medium comprises:~~

_____ comparing the parental level identified in indicated by the meta-information with the parental level identified in as the set parental level set in the reproduction apparatus;

_____ selecting one of the plurality of mark-up documents corresponding to different parental levels based on a result of the comparing; and

_____ reading the selected one of the plurality of mark-up documents corresponding to different parental levels from the data storage medium.

19. (Currently amended) The method of claim 17, wherein the plurality of mark-up documents comprising to different parental levels comprise a warning mark-up document to display a warning message on the mark-up screen that interactive contents associated with the AV data cannot be displayed; and

wherein the AV data is reproduced in the interactive mode using the mark-up document presenting a warning message indicating that interactive content cannot be displayed when the parental level in indicated by the meta-information is lower higher than the set identified parental level set in the reproduction apparatus, the selected one of the plurality of mark-up documents is the warning mark-up document.

20. (Currently amended) A method ~~to reproduce~~ of reproducing data recorded on a data storage medium ~~using~~ performed in a reproduction apparatus in which the data storage medium is loaded,

the data storage medium comprising

a video directory,

audio/video (AV) data stored in the video directory,

an interactive directory, and

mark-up documents, stored in the interactive directory, to reproduce the AV data in an interactive mode when the mark-up documents are interpreted by a presentation engine of the reproduction apparatus,

the interactive directory comprising a plurality of sub-directories corresponding to a plurality of different parental levels,

the mark-up documents comprising

a plurality of mark-up documents corresponding to the plurality of different parental levels stored in corresponding ones of the plurality of sub-directories corresponding to the plurality of different parental levels, and

a start-up mark-up document comprising link information identifying locations of the plurality of mark-up documents corresponding to the plurality of different parental levels,

the method comprising:

reading data recorded on the data storage medium in an interactive mode, including an interactive directory of the start-up mark-up document from the data storage medium; documents and audio/visual (AV) data that are linked and embedded in the mark-up documents;

identifying a set-parental level set in the reproduction apparatus;

reading a one of the plurality of mark-up document in a sub-directory documents corresponding to the plurality of different parental levels that corresponds to the set-identified parental level among set in the reproduction apparatus from one of the sub-directories of the interactive directory corresponding to the plurality of different parental levels that corresponds to the identified parental level set in the reproduction apparatus based on the link information in the read start-up mark-up document; and

reproducing the AV data using interpreting the read one of the plurality of mark-up document documents using the presentation engine of the reproduction apparatus to display a mark-up screen having an AV screen embedded therein;

reading the AV data from the data storage medium;
decoding the read AV data to reproduce the AV data; and
displaying the reproduced AV data on the AV screen embedded in the mark-up screen.

21. (Canceled)

22. (Currently amended) A method ~~to reproduce~~ of reproducing data recorded on a data storage medium ~~using~~ performed in a reproduction apparatus in which the data storage medium is loaded,

the data comprising

audio/video (AV) data, and

mark-up documents to reproduce the AV data in an interactive mode when the mark-up documents are interpreted by a presentation engine of the reproduction apparatus,

the mark-up documents comprising a mark-up document comprising display rule information for a plurality of different parental levels,

the method comprising:

~~reading data recorded on the data storage medium in an interactive mode, including a~~
the mark-up document documents and audio/visual (the AV) data from the data storage medium;
~~that is linked and embedded in the mark-up document;~~

decoding the read AV data to reproduce the AV data;

interpreting the read mark-up documents using the presentation engine of the reproduction apparatus to generate a mark-up screen having an AV screen embedded therein;
and

blending the generated mark-up screen and the reproduced AV data so that the reproduced AV data is displayed on the AV screen embedded in the mark-up screen;

wherein the interpreting comprises:

identifying a value of a class-value predetermined attribute of an element of a one of the read mark-up document documents; and

determining whether to display the element on the mark-up screen depending on the identified value of the class-value and predetermined attribute, the display rule information, and a parental level set in the reproduction apparatus.

~~embedding an AV screen obtained by reproducing the AV data in a mark-up screen obtained as a result of the determination and displaying the result of the embedment.~~

23.—24.(Canceled)

25. (Currently amended) ~~An~~ A reproduction apparatus to reproduce data recorded on a data storage medium, the data comprising audio/video (AV) data, and mark-up documents to reproduce the AV data in an interactive mode, using a the mark-up document documents comprising a mark-up document comprising display rule information for a plurality of different parental levels, the reproduction apparatus comprising:

~~a reader arranged to read the mark-up document~~ documents and the AV data from the data storage medium;

~~an AV decoder arranged to decode the AV data read by the reader to reproduce the AV data;~~

~~a presentation engine to interpret the mark-up documents read by the reader to generate a mark-up screen having an AV screen embedded therein; and arranged to identify a predetermined value of an element of the mark-up document and determine whether to display the element depending on the predetermined value and to display rule information; and~~

~~a blender arranged to blend a the mark-up document interpreted screen generated by the presentation engine and an AV screen obtained by reproducing the AV data reproduced by the decoder so that the reproduced AV data is displayed on the AV screen embedded in the mark-up screen;~~

wherein the presentation engine:

identifies a value of a predetermined attribute of an element of one of the mark-up documents; and

determines whether to display the element on the mark-up screen depending on the value of the predetermined attribute, the display rule information, and a parental level set in the reproduction apparatus.

26. (Currently amended) The reproduction apparatus of claim 25, wherein the display rule information is written according to cascading style sheets (CSS) rules.

27. (Currently amended) The reproduction apparatus of claim 26, wherein the display rule information is written in a form of a CSS file.

28.—33. (Canceled)

34. (Currently amended) An A reproduction apparatus to reproduce data from a data storage medium,

the data comprising

audio/video (AV) data, and

mark-up documents to reproduce the AV data in an interactive mode by displaying the AV data on an AV screen embedded in a mark-up screen displaying interactive contents associated with the AV data,

the mark-up documents comprising a mark-up document comprising instructions corresponding to different parental levels to control display of the interactive contents associated with the AV data depending on a parental level set in the reproduction apparatus,

the reproduction apparatus comprising:

a reader arranged to read data from the data storage medium in an interactive mode, including the mark-up documents and audio/visual (the AV) data from the data storage medium; that are linked and embedded in the mark-up documents; and

a presentation engine controller configured to control the reader to read AV data and a mark-up document from the data storage medium, wherein, in an interactive mode, the controller interprets to interpret the mark-up document comprising the instructions corresponding to a the different parental level set by a user indicative of levels in the mark-up documents read by the reader to determine whether to reproduce the AV data recorded on the data storage medium display the interactive contents associated with the AV data depending on the parental level set in the reproduction apparatus.

35. (Currently amended) The reproduction apparatus of claim 34, wherein the presentation engine interprets the mark-up documents read by the reader to generate the mark-up screen having the AV screen embedded therein; and

wherein the reproduction apparatus further comprising comprises:

an AV decoder ~~for decoding to decode~~ the AV data read by the reader to reproduce the AV data; and

a blender ~~for blending to blend~~ the mark-up document screen generated by the presentation engine and an AV screen ~~obtained by reproducing the AV data reproduced by the decoder~~ so that the reproduced AV data is displayed on the AV screen embedded in the mark-up screen.

36. (Canceled)

37. (Currently amended) The reproduction apparatus of claim 34, wherein the presentation engine comprises ~~plugs-in~~ plug-ins.

38. (Currently amended) The reproduction apparatus of claim 34, wherein the ~~controller~~ retrieves reproduction apparatus has a capability of retrieving AV data and the mark-up document documents through a network.

39. (Currently amended) The reproduction apparatus of claim 34, wherein the different parental level has five different parental levels comprising comprise G, PG, PG13, R, and NC-17 parental levels defined by data storage medium video standards a DVD-video standard for compatibility.

40. (Currently amended) The reproduction apparatus of claim 34, wherein the ~~mark-up documents reproduce the AV data~~ comprises DVD-video data; recorded on the data storage medium according to data storage medium video standards in the interactive mode, and wherein the mark-up documents are provided according to different parental levels comprise different parental levels according to a DVD-video standard for compatibility.

41. (Currently amended) The reproduction apparatus of claim 34, wherein the presentation engine uses an application program interface (API) to identify the parental level set ~~for in~~ the reproduction apparatus.

42. (Currently amended) The reproduction apparatus of claim 34, wherein the mark-up documents comprise a plurality of mark-up documents corresponding to the different parental levels; and

wherein the parental level information is a parental level written in a start-up document, where the mark-up document comprising the instructions corresponding to the different parental levels is a start-up mark-up document comprises comprising:

_____ meta-information on the indicating a parental level, of the mark-up documents; a set parental level; and

_____ link information identifying locations of the mark-up document documents corresponding to the different parental level in the meta-information levels.

43. (Currently amended) The reproduction apparatus of claim 42, wherein each mark-up document of the plurality of mark-up documents corresponding to different parental levels corresponds to a different one of the different parental levels, and is to be interpreted by the presentation engine only when the parental level of the mark-up document is the same as the parental level set in the reproduction apparatus. ~~the link information is the mark-up document information indicating whether the parental level set by the user is higher or lower than the parental level written in the start-up document.~~

44. (Currently amended) The reproduction apparatus of claim ~~34~~ 42, wherein the ~~controller identifies the parental level set in the apparatus to reproduce the data using~~ presentation engine uses an application program interface (API) to identify the parental level set in the reproduction apparatus. ~~and interprets the mark-up document using meta-information and link information written in a mark-up document designated as a start-up document.~~

45. (Currently amended) The reproduction apparatus of claim 34, wherein the data storage medium comprises: ~~a root directory having~~
a video directory where in which the AV data is stored; and
an interactive directory where in which the mark-up document are stored. ~~to support the interactive mode.~~

46. (Canceled)

47. (Currently amended) The reproduction apparatus of claim 34, wherein the mark-up document comprising the instructions corresponding to the different parental levels comprises ~~the~~ a mark-up document comprising, or linked to, display rule information for the different parental levels written according to cascading style sheets (CSS) file rules.

48. (Currently amended) The reproduction apparatus of claim-48 ~~47~~, wherein the mark-up document comprising, or linked to, display rule information is linked to a CSS file comprising the instructions corresponding to the different parental levels written according to the CSS rules. is generated separately from the mark-up document.

49. (Currently amended) The reproduction apparatus of claim 34, wherein the mark-up ~~document is written using documents comprise:~~

documents written in a mark-up language; and/or

documents to which source code written in a script language to represent a document appropriate for the parental level and/or Java is linked; and/or

documents into which source code written in the script language and/or Java is inserted; and/or

mark-up resources.

50. (Currently amended) A method ~~to reproduce~~ of reproducing data recorded on a data storage medium using performed in a reproduction apparatus in which the data storage medium is loaded,

the data comprising

_____ audio/video (AV) data, and

_____ mark-up documents to reproduce the AV data in an interactive mode by displaying the AV data on an AV screen embedded in a mark-up screen displaying interactive contents associated with the AV data when the mark-up documents are interpreted by a presentation engine of the reproduction apparatus,

the mark-up documents comprising

_____ a warning mark-up document to display a warning message on the mark-up screen that the interactive contents associated with the AV data cannot be displayed, and

a start-up mark-up document comprising
information indicating a parental level of the mark-up documents, and
information identifying a location of the warning mark-up document,
the method comprising:
selecting the interactive mode of the reproduction apparatus;
~~reading data recorded on the data storage medium in the interactive mode, including the~~
~~mark-up documents and audio/visual (the AV) data from the data storage medium; that are~~
~~linked and embedded in the mark-up documents;~~
identifying a parental level ~~set by a user~~ in the reproduction apparatus;
interpreting the start-up mark-up document in the read mark-up documents with the
presentation engine of the reproduction apparatus to identify identifying the parental level written
in a of the mark-up documents; document designated as a start-up document;
comparing the parental level ~~recorded in of~~ the mark-up document documents identified
by interpreting the start-up mark-up document in the read mark-up documents with the identified
parental level set by the user in the reproduction apparatus;
~~reproducing the AV data in the interactive mode using the mark-up document with a~~
interpreting the warning mark-up document in the read mark-up documents with the presentation
engine of the presentation engine of the reproduction apparatus based on the information in the
start-up mark-up document identifying the location of the warning mark-up document to display
the warning message indicating that the interactive content corresponding to contents
associated with the AV data cannot be displayed when if a result of the comparing indicates that
the parental level written in of the mark-up documents identified by interpreting the start-up mark-
up document is less higher than the identified parental level set by the user in the reproduction
apparatus; and
~~reproducing the read AV data in the interactive mode using the mark-up document~~
~~comprising and displaying the interactive content to contents associated with the AV data when if~~
the result of the comparing indicates that the parental level written in of the mark-up documents
identified by interpreting the start-up document is not higher than the identified parental level set
by the user in the reproduction apparatus.

51. (Canceled)

52. (Currently amended) A method ~~to reproduce~~ of reproducing data recorded on a data storage medium ~~using~~ performed in a reproduction apparatus in which the data storage medium is loaded,

the data comprising

audio/video (AV) data, and

mark-up documents to reproduce the AV data in an interactive mode by displaying the AV data on an AV screen embedded in a mark-up screen displaying interactive contents associated with the AV data when the mark-up documents are interpreted by a presentation engine of the reproduction apparatus,

the mark-up documents comprising a mark-up document comprising display rule information for a plurality of different parental levels,

the method comprising:

~~reading data recorded on the data storage medium in the interactive mode, including a~~
the mark-up document documents and audio/visual (the AV) data from the data storage medium;
~~that is linked and embedded in the mark-up document;~~

identifying a parental level set by a user in the reproduction apparatus;

identifying a value of a class value assigned to a predetermined attribute of an element of one of the read mark-up document documents;

interpreting the mark-up document comprising the display rule information for the plurality of different parental levels determining using the presentation engine of the reproduction apparatus to determine whether to display the predetermined element based upon the parental level identified and the identified value of the class value and with reference to attribute, the display rule information, and the identified parental level set in the reproduction apparatus; and

displaying an AV interpreting the mark-up documents using the presentation engine of the reproduction apparatus to display the mark-up screen obtained by reproducing having the AV data in the mark-up screen embedded therein based on a result of the determining.

53. (New) The method of claim 22, wherein the display rule information is written according to cascading style sheets (CSS) rules.

54. (New) The method of claim 53, wherein the display rule information is written in a form of a CSS file.

55. (New) The method of claim 22, wherein the predetermined attribute is a class attribute.

56. (New) The method of claim 22, wherein the display rule information for each of the plurality of different parental levels comprises individual display rule information for each higher one of the plurality of different parental levels.

57. (New) The reproduction apparatus of claim 25, wherein the predetermined attribute is a class attribute.

58. (New) The reproduction apparatus of claim 25, wherein the display rule information for each of the plurality of different parental levels comprises individual display rule information for each higher one of the plurality of different parental levels.